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# **ENGINEERING ECONOMY**

**A Manager's Guide to  
Economic Decision Making**

**THIRD EDITION**

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**AMERICAN TELEPHONE AND TELEGRAPH COMPANY**

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capital repayment costs. Essentially, it is the accountant's specialized version of capital repayment; and it is applied, as described earlier, to assets whose lives are greater than one year.

### Depreciation Accounting

As pointed out before in this book, accountants maintain the books of the firm and prepare reports which will convey financial information about the firm to managers, stockholders, the financial community and the regulatory bodies. As a result, accountants keep careful records of receipts and expenditures and then assign them to the proper month or year—that is, the “accounting period” to which they apply. Although most of these basic data are actual past receipts and disbursements, some have to be estimates of future receipts and disbursements. Examples of such estimates would include revenues for service given in the current month but which is to be billed and collected in the next month; taxes computed for the current year but which are payable next year; and the anticipated gross salvage and cost of removal for existing plant. All these transactions must be assigned to accounting periods, too, so that revenues and expenses will match well enough in time so that the reported net income of a period will be meaningful.

An illustration earlier in this chapter depicted the capital repayment cost as a dollar amount at the time the investment was made. However, if accountants included this entire expenditure as an expense in the year of the investment, earnings would be distorted for that year and for future years as well. This is why accountants distribute the cost of the investment over the service life of the property, using the procedure known as *depreciation accounting*.

In accounting, the original cost of plant is viewed as a *prepaid expense*, meaning a cost which is to be allocated proportionately to each of the accounting periods during which the plant is used. *Depreciation expense*, then, is the estimated amount of capital consumed during each accounting period. The *depreciation reserve* is the record of how much of the cost of plant currently in service has been recovered.

According to the definition expressed by the American Institute of Certified Public Accountants, the accounting concept is strictly one of cost allocation and not of valuation. In other words, the depreciation expense for an accounting period is not a measure of the decrease in value of the firm's assets. It is recorded as an expense on the income statement, and it is one of the deductions from revenues that is included when earnings are determined. It is also recognized as an allowable deduction when taxable income is computed.

Various techniques are available to the accountants for determining depreciation. Some of these techniques are advantageous from an income-tax standpoint (for example, accelerated depreciation which will be covered in Chapter 9). Various techniques are also available for determining the depreciation to be reported on financial statements. However, as Chapter 3 pointed out, the Uniform System of Accounts has specified that telephone companies must use straight-line depreciation on financial statements. This present chapter is therefore limited to a discussion of the straight-line depreciation technique—which, because it is used for the firm's books, is also called *book depreciation*.

### Straight-Line Depreciation

An example earlier in this chapter introduced straight-line depreciation assuming negligible salvage. However, the complete formula, including salvage, is:

$$\frac{100\% - \% \text{ net salvage}}{\text{Average service life}} = \% \text{ depreciation rate}$$

where: Net salvage = gross salvage - cost of removal

Straight-line depreciation allocates the first cost less the net salvage (this difference may be called the *service value*) equally over each year of life. However, when many items are involved, it would not be practical to use the straight-line formula for each item of plant. The Uniform System of Accounts therefore allows the formula to be applied to groups of telephone plant.

To compute depreciation expense for an accounting period, accountants multiply the original cost of an aggregation (account or subaccount) by the depreciation rate for that aggregation. In each accounting period, the depreciation expense is added to the Accumulated Depreciation (reserve) account, as well as being charged to the Depreciation Expense account, as Chapter 3 explained.

If an individual unit lives exactly the average service life, its total accumulated depreciation expense will equal its original cost—provided negligible salvage and a constant average service life are assumed. At retirement, then, the accountant will subtract the original cost from both the Plant account and the Accumulated Depreciation account. This practice effectively cancels out the amount added to the Plant account when the plant item was installed, as well as its own Accumulated Depreciation expense in the Accumulated Depreciation account. Subtracting the same amount from the plant account (an asset) and from the Accumulated Depreciation account (a contra-asset) has left the total assets unchanged. Because the asset side of the balance sheet did not change, the liability side did not change either. Therefore, the process of retiring plant has in no way retired capital.

This point may be clearer with an illustration:

1. Assume the following simplified balance sheet at a point in time:

Plant	\$1,000	
Less Accum. Depr.	200	
Total Assets	\$ 800	Total Capital \$800

2. Now suppose that an expenditure of \$100 is made for an item of plant with funds from new capital:

Plant	\$1,100	
Less Accum. Depr.	200	
Total Assets	\$ 900	Total Capital \$900

3. During the life of that item, its cost is recovered through depreciation accruals, which are credited (added) to Accumulated Depreciation. This means that immediately before the retirement of that item, Accumulated Depreciation is larger by \$100.

4. First assume that no other new plant has been added:

Plant	\$1,100	
Less Accum. Depr.	300	
Total Assets	\$ 800	Total Capital \$800

Since no plant additions have been made, Accumulated Depreciation expense has been returned directly to the investors rather than being reinvested in the business. In effect, the capital raised to purchase this plant has been "repaid," returning Total Capital to its level before the purchase of the item.

5. Now consider, instead, a case in which new plant has been added which costs the same as the item which has reached the end of its life, and



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Verizon

Loop Cost Analysis Model  
**LOOP STUDY COST RESULTS SUMMARY**  
VA LOOP - FCC UNE - 2W BULS 9/20/01

Study ID: 745

REV VRUC, UNIV 9/13/01, FDR THRES, 4KFT, INTG 70% OF

	DIRECT COST	SHARED COST	TOTAL COST
CELL 1	15.36	2.54	17.91
CELL 2	24.86	1.51	26.37
CELL 3	40.69	2.85	43.54
JURISDICTION AVERAGE	19.92	2.47	22.38



J



----- Forwarded by DAVID J. COLLINS/EMPL/MD/Bell-Atl  
on 12/06/2000 05:29 PM -----

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Subject: Re: IDLC Interfaces (Document link: DAVID J. COLLINS  
(Archive))

Annette:

Thanks for the preliminary responses that you provided to the IDLC interface questions that we sent to you following our September 9, 1999 meeting in New York. BA-NY still needs detailed answers to many of our original questions so we can evaluate the two technical arrangements proposed by MCI (Multi-switch hosting/GR-303 interface, and Digital Cross-connect System (DCS) DS1 handoffs). A technical team of Bell Atlantic engineering and operations personnel has reviewed your preliminary responses, and we've added some additional comments to assist you in fully responding to the questions. When the questions (see attached file) are answered, a number of significant technical and operational requirements relating to the definition, direction, and functioning of the two proposals will be addressed, allowing further technical evaluation.

In your response you raised the BFR (Bona Fide Request) issue again. In our September 9 session Bell Atlantic agreed that at this point labeling our work together as a BFR is not necessary, but that regardless, we need your input in a number of areas in order to define, evaluate, analyze, develop, and potentially offer the technical arrangements that you have proposed. Don Albert reiterated this in a September 27, 1999 e-mail that I forwarded to you.

You also restated your position that this arrangement will not result in the creation of a new UNE. At this time we don't think agreement on this point is likely, nor is it a necessity for BA-NY to proceed with a preliminary technical evaluation and analysis of the two proposed methods, however, from BA-NY's perspective both of the proposals will require development of new methods of loop interconnection that do not exist today. For example, both would require new Bell Atlantic Technical Reference specifications (the same scope and purpose as Bell Atlantic's TRs for our existing family of UNE loop types) to define these new DS1 interfaces carrying individual end user loops. In addition, as you can see from our questions, both would also require development of new processes, new procedures, and new systems for pre-ordering, ordering, provisioning, maintenance and repair, testing, and billing.

When we receive detailed answers to the attached questions, BA-NY will proceed with a high level preliminary technical analysis (similar to phase one of the three phase BFR process) at no charge. Bell Atlantic will incur substantial costs for technical resources to perform the preliminary technical evaluation and analysis. Therefore, when the responses are provided to the attached questions we request that each of the participating CLECs provide a written statement of concurrence. This will confirm that there is CLEC consensus regarding the requirements. With the answers/requirements and this assurance (stability of technical requirements, definitions, and assumptions) BA-NY will then proceed with the preliminary technical analysis.

If the preliminary analysis indicates that development of these arrangements is technically possible, but further development work is required, then BA-NY will include an estimated price quote for further work. BA-NY would then expect to receive payment of these costs from requesting CLECs before proceeding with additional developmental work.

Finally, thank you for your offer to provide a Telcordia contact name. We already have ongoing communications with them on associated issues and we will continue to work with them as needed. We look forward to receiving your full response. If you have any questions in the meantime please don't hesitate to call me, or call Don Albert at (804) 772-1900.

Jim Dail  
(703) 974-4533

(See attached file: IDLCques.doc)

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Subject: Re: IDLC Interfaces

Jim,

First, I'd like to apologize for not responding to your e-mail until today, but we've been working very hard on these issues and look forward to working cooperatively with BA-NY. Attached you will find the collective response to BA-NY questions of MCI WorldCom, Broadview Networks (formally Community Networks), COVAD, Sprint and CTE.

I'd like to address the BFR process and its place here. As I indicated at our face to face meeting and in subsequent e-mails, the BFR process is not appropriate with regard to this issue because:

- 1) This is an industry issue not an MCI WorldCom specific issue;
- 2) we are not requesting a new UNE. What is new here and hopefully nondiscriminatory is a means of getting access to loops that are served on IDLC; and
- 3) at this point in our collaboration the BFR would only serve to add additional delay to an already established working process.

You also mention in your e-mail below that BA-NY would find it beneficial to visit sites where Multi-Switch Hosting/GR303 Interface and /or Digital Cross Connect/DS1 Handoff might be working in commercial operation so that you may be able to speed your analysis of the IDLC unbundling proposals made at our in face meeting. Although we are not aware of any ILEC that currently has the Mulit-Switch Hosting/GR303 Interface and/or Digital Cross Connect/DS1 Handoff in commercial operation today, I did speak to the people at Telcordia and they are willing to assist BA-NY in this effort. Since you have indicated that BA-NY is willing to work beyond the normal BFR process, perhaps a meeting with Telcordia would prove to be very useful. I can provide you with the contact name and telephone number.

We look forward to working with BA-NY in setting up a collaborative session in which we may begin working this issue.

Annette  
914-312-6269

(See attached file: idlc.doc)

Date: Mon, 27 Sep 1999 14:02 -0400 (EDT)  
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Subject: Re: IDLC Interfaces

Annette,

This is in response to questions and statements in your September 21, 1999 Email. BA-NY believes that these potential DS1 interfaces under discussion are new UNEs, as well as new methods of interconnection (they do not exist and are not being provided today).

However, as discussed at the September 9, 1999 meeting BA-NY is willing to do work beyond that of the normal BFR process. For example, if MCI can find either of these arrangements (Multi-Switch Hosting/GR-303 Interface, and Digital Cross Connect/DS1 Handoff) working in commercial operation anywhere in the country - BA-NY would be willing to visit these sites to see if anything could be learned to speed our analysis of MCI's proposals.

In addition, as we also discussed at our meeting, we can call the steps we are following the BFR Process, or we can call them the "Petunia" process. In either case for BA-NY to proceed with a preliminary analysis of MCI's proposals, we need MCI to address the items on the BFR Form and the additional questions we've provided. When MCI



provides this information to BA-NY in writing, even if MCI crosses out the term BFR, and inserts the word "Petunia" - BA-NY will proceed. BA-NY will perform the preliminary analysis at no charge. If the preliminary analysis concludes that development of these arrangements is technically possible, but further development work is required, then BA-NY will include a price quote for further work. BA-NY would then expect to receive payment of this quote before proceeding with additional developmental work.

BA-NY stated in December 1998 that GR-303 cannot be regarded as a "currently available" technology in an unbundled, multicarrier environment. However, to move things along, if in answering BA-NY's questions MCI provides sufficient technical and operational detail on the proposed arrangement(s), BA-NY will re-examine the topic of technical feasibility in the preliminary analysis/analyses we provide.

I hope this clarifies BA's Email/letter dated September 20, 1999. If you have any further questions please contact Jim Dail, or myself.

Don Albert 804-772-1900

"annette s. guariglia" <Annette.S.Guariglia@wcom.com> on 09/21/99  
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Subject: Re: IDLC Interfaces

Helen/Jim,

MCI WorldCom is in receipt of your questions and will need a couple of weeks to respond. I have forwarded these questions to the carriers that participated at the IDLC meeting because they are also interested in this issue.

I would, however, like some clarification regarding your note below. You mention that you've "attached a blank BFR Form if MCI wishes to pursue these new UNE arrangements further". Does this mean that BA-NY will not pursue unbundling loops served on IDLC unless MCI WorldCom files a BFR? It is MCI WorldCom's understanding that a BFR is not necessary because: 1) a new UNE is not being requested and 2) this is of interest not only to MCI WorldCom, but to the industry. It is also MCI WorldCom's understanding that the first IDLC meeting was the start of a working relationship between the CLECs and BA-NY to make unbundling loops served on IDLC a reality, since technical feasibility is no longer in dispute.

I look forward to your clarification.

Thank you,  
Annette

Date: Mon, 20 Sep 1999 20:05 -0400 (EDT)

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Subject: IDLC Interfaces

FROM JIM DAIL - BELL ATLANTIC:

Ms. Annette Guariglia  
MCI Worldcom

Annette:

As promised at our meeting on 9/9/99 regarding IDLC and DS1 interfaces for unbundled loops, attached are specific questions to be answered by MCI. Although several types of technical possibilities were discussed during the meeting, BA-NY prepared questions that focus on the two main potential arrangements that MCI identified. They are: 1) Multi-Switch Hosting/GR-303 Interface, and 2) Digital Cross Connect/DS1 Handoff.

BA-NY would appreciate written responses to the questions. BA-NY needs this information to proceed with further analysis of MCI's proposals, should MCI decide to submit a Bona Fide Request ("BFR") for either Multi-Switch Hosting/GR-303 Interface or Digital Cross Connect System/DS1 Handoff. For your convenience, I have also attached a blank BFR Form if MCI wishes to pursue these new UNE arrangements further.

Questions about "the questions" can be directed to Don Albert on 804-772-1900, or Dave Collins on 410-736-5962. If I can be of any assistance, please do not hesitate to contact me.

Jim Dail

(See attached file: mci-ques5.doc) (See attached file: BFR-form.doc)

### **Multi-Switch Hosting / GR303 Interface:**

1. a) Provide a detailed diagram of the desired configuration. This should include: the MCI switch (and MCI switch types), DSX facilities at the MCI switch location, the BA switch, the facilities between the MCI switch location and the BA switch location, the termination arrangements of facilities between the MCI switch location and BA switch location, Mux's and Fiber Optic Terminals, BA DLC COT, BA fiber distribution panel(s), BA DSX and/or DCS, BA DLC RT, and facilities between the DLC COT and RT.  
b) For each equipment/facility please indicate if this is owned by MCI, or BA.

**We really need you to answer this question (especially the diagram) for us to understand how you're envisioning this arrangement. Please include the type(s) of switches that will be used and the software release (or higher) the switches would be on. It's important for us to know which physical components would be owned by BA, and which physical components would be owned by the CLEC.**

2. Provide diagrams of the BA DLC COT and RT common control shelves and channel bank assemblies indicating connections and hardware for: MCI surveillance, testing, and alarms – and for BA surveillance, testing and alarms.

**At this point we don't need detailed wiring diagrams. However, can you describe the main components of BA's DLC COT and RT that would need to be accessed for surveillance, testing, and alarms? Please identify the "access port" hardware that exists, or that vendors would need to develop. If it makes it easier, assume/identify a particular DLC vendor that would be used.**

3. Will MCI collocate at BA's wire centers to connect to and transport DS1's back to MCI's switch location? If not, what services from which service provider(s) does MCI propose to use to connect to and transport DS1's back to MCI's switch location?

**COLLOCATION AT BA-NY's WIRE CENTER IS NOT NECESSARY, ALTHOUGH CLECS MAY USE COLLOCATION AT ITS OPTION. IF COLLOCATION IS NOT USED, CLECS WILL LEASE DEDICATED TRANSPORT FROM BA-NY.**

**Bell Atlantic feels that at this juncture attempting to add the element of GR-303 "combinations," including BA UNE transport, to a possible multi-switch hosting/GR-303 arrangement will add substantial complexity to this request. This is particularly true in the areas of: testing, alarms, ordering, and trouble isolation. Holding our different regulatory positions on collocation aside in order to move forward with the evaluation/analysis, can we assume that a CLEC will collocate hardware in a BA CO to accept the DS1's, and transport these DS1's back to the CLEC switch?**

4. Relating to the components in #1, which facilities, equipment, and software items does MCI propose will be inventoried (for provisioning and assignment purposes) by MCI; and which will

be inventoried by BA. If MCI proposes that BA inventories equipment/software items owned by MCI, what information will MCI provide to BA? Has MCI obtained Telcordia OSMINE approval for MCI's different switch types?

CLECS WOULD INVENTORY ALL EQUIPMENT AND FACILITIES THAT ARE PROVIDED AS PART OF THE CLEC NETWORK. WE EXPECT THAT BA-NY WILL INVENTORY ALL EQUIPMENT AND FACILITIES THAT ARE PROVIDED BY BA-NY.

**The term "CLEC network" could include physical items owned by the CLEC, as well as unbundled equipment provided by BA. Do you mean you will inventory all CLEC-owned equipment and BA will inventory all BA-owned equipment?**

**Please answer the CLEC Switch/OSMINE question. (We need this information to identify interoperability issues relating to specific potential CLEC switching systems and Operations Support Systems).**

5. Please describe MCI's OSSs that would be used in the multi-switch hosting arrangement for provisioning, surveillance, testing, and alarms. (E.g. name of the OSS, overall functionality of the OSS, how the OSS would be specifically used by MCI and/or BA in this shared GR303 arrangement).

PLEASE CLARIFY WHAT IS MEANT BY TYPE OF OSS.

**In the multi-switch hosting arrangement, one or more CLEC Operations Support Systems (OSS) may be used for the functions of provisioning, surveillance, testing, and alarms. Can you provide the name of each system(s), the vendor(s) of the system (e.g. Lucent, Alcatel, Telcordia, CLEC internally developed), describe the overall functionality of the system(s), and how it would be used by the CLEC and/or BA in this shared GR-303 arrangement?**

**Some DLC/GR-303 vendors are beginning to offer unique Operations Support System capabilities with their products. However, OSS offerings from different vendors don't always work together (interoperability). Assuming BA and a number of CLECs deploy these varying systems, do you have any ideas on how these systems could be interoperable?**

6. For the following troubles/fault locations: MCI switch hardware, MCI switch software, transport facilities between MCI switch location and BA switch location, DS1's (allocated to MCI) between the DLC COT and RT (hardware trouble), DS1's (allocated to MCI) between the DLC COT and RT (software trouble), BA loop from DLC RT to NID (trouble identified by end user), BA loop from DLC RT to NID (trouble identified by alarm) - - - please describe what MCI proposes for:

- Which company notices the trouble
- How does that company notice the trouble
- What testing will each company perform (in what sequence)
- What test systems and databases will each company access
- How will the trouble be resolved (closed out)

THE CLEC WOULD RECEIVE ALARMS AND TROUBLE INDICATIONS ASSOCIATED WITH THE GR303 INTERFACE GROUP DEDICATED TO THAT CLEC. THE CLEC WILL BE RESPONSIBLE TO SECTIONALIZE THESE FAULTS. ANY FAULTS PROVING INTO BA-NY'S NETWORK (BEOND THE POT FRAME) WOULD BE REFERED TO BA-NY FOR RESOLUTION. IN ADD ITION, THE CLEC WOULD BE RESPONSIBLE FOR RECEIVING AND SECTIONALLIZING ALL CUSTOMER REPORTS. BA-NY WOULD BE RESPONSIBLE TO RECEIVE ALARMS AND TROUBLE INDICATIONS ASSOCIATED WITH THE GR303 INTERFACE GROUP DEDICATED TO BA-NY. IN ADDITION BA-NY WOULD BE RESPONSIBLE TO RECEIVE AND PROACTIVELY RESPOND TO ALL ALARMS AND TROUBLE INDICATIONS ON FACILITY AND HARDWARE THAT ARE PART OF THEIR NETWORK.

**You can provide additional details later, but for now could you say what test systems and databases (inventory records) BA and the CLECs would access?**

7. Describe the process steps proposed for an existing BA POTS end user to become an MCI POTS end user? Does MCI propose a transfer of existing end users using a conversion process, or does MCI propose the provisioning of new parallel facilities? Please describe the OSS's involved from each company, and timing/coordination requirements for the different work steps. ASSUMING THAT A CLEC GR303 INTERFACE GROUP HAS BEEN ESTABLISHED, BA-NY WOULD MAP THE EXISTING BA-NY POTS END USER TO THE CLEC's GR303 INTERFACE GROUP. EXISTING UNBUNDLED LOOP PROCESSES OF PRE-TRANSLATIONS IN CLEC's SWITCH AND LNP PROCESSES CAN ACCOMMODATE THE CONVERSION.

**Does your response envision a hot-cut (transfer of working service reusing existing facilities)? Existing hot-cut processes don't exactly fit. Today with individual analog UNE loop hot-cuts BA checks for CLEC dial-tone and telephone number (prior to cutover) at BA's MDF. For the Multi-switch hosting/GR-303 arrangement - how do you propose BA would check in advance that CLEC switch translations are complete/correct - - before proceeding with cutover? How will CLECs build translations in their GR-303 interface group to the DLC COT, while the end user is still working in BA's switch through the DLC COT?**

8. Please describe how MCI will do traffic engineering for MCI's portion of the shared GR303 DLC? Please describe the anticipated process for MCI to request additional DS1's between the DLC COT and RT?, and between the DLC COT and MCI's switch? THE CLEC WOULD BE RESPONSIBLE FOR ALL TRAFFIC ENGINEERING ON THE GR303 INTERFACE GROUP DEDICATED TO THE CLEC. EXISTING INDUSTRY PROCESSES SUCH AS THE ASR CAN BE UTILIZED TO AUGMENT THE DS-1S.

**BA understands the CLECs will do all traffic engineering for the GR-303 VIGs dedicated to them. Will the CLECs obtain all needed usage data from their own switches; or is there any end user, or system, usage data that you will need from BA (from BA's DLC system)? If data is needed from BA, please identify/list specifically what.**

9. If additional GR303 interface groups are not available at a specific location, would MCI propose that a new GR303 system be built in order to accommodate re-assignment of the unbundled loop - to transfer the end user to MCI using a GR303 interface?

IF ADDITIONAL GR303 INTERFACE GROUPS ARE NOT AVAILABLE AT SPECIFIC LOCATIONS, THE CLEC AND BA-NY WOULD NEED TO WORK TOGETHER COOPERATIVELY TO DETERMINE THE CAUSE OF SUCH UNAVAILABILITY AND EXPLORE POTENTIAL REMEDIES. WITHOUT MORE INFORMATION ABOUT THE SPECIFIC CAUSE OF THE LACK OF AVAILABILITY, IT IS SIMPLY IMPOSSIBLE TO SPECULATE ON POTENTIAL REMEDIATION. THE CLECS WOULD EXPECT BA-NY TO PROVIDE INFORMATION SUFFICIENT FOR CLECS TO UNDERSTAND THE ROOT CAUSE OF THE ISSUE.

**What we were getting at in this question is that different vendors/manufacturers have limitations on the number and/or size of virtual interface groups available in a DLC system. So, there are finite limits in existing systems. Can you answer the question relative to this?**

**In addition, BA-NY will be primarily deploying DLC systems with GR-303 interfaces where additional capacity is needed for both loop and switch growth. So, for sometime, there won't be much of it in our network. In locations where DLC with GR-303 interfaces is not deployed, BA assumes the CLECs will continue to obtain individual analog voice-grade unbundled loops as is done today. Do you disagree? If you disagree, please describe the approach/process that you envision.**

10. Please describe the process/steps proposed for an MCI end user (served via the shared GR303 DLC) to become an end user of another CLEC (via a shared GR303 DLC). Include the different disconnect actions proposed to be performed by MCI employees, by BA employees, and by the new CLEC's employees?

THE LOOP WOULD BE DISCONNECTED FROM THE CLEC #1. THE LOOP WOULD THEN BE CONNECTED TO THE OTHER CLEC (CLEC #2) ACCORDING TO WHATEVER INTRERCONNECTION/LOOP ACCESS ARRANGEMENTS CLEC #2 HAS ESTABLISHED WITH BA-NY. OBVIOUSLY, CLEC #2 WOULD HAVE THE SAME OPPORTUNITY AS CLEC #1 TO ESTABLISH SUITABLE IDLC INTERFACE ARRANGEMENTS. ADDITIONALLY, ATIS'S OBF (ORDERING AND BILLING FORUM) HAS ADDRESSED THE ISSUE OF END USERS CHANGING BETWEEN CLEC PROVIDERS.

**The OBF only deals with Ordering and Billing. The complicated pieces of the situation described in the question are the provisioning and the actual cutover (translations in the two CLEC switches and mapping in BA's DLC system). For the move of an end user from CLEC #1 to CLEC #2 (where both CLECs would be using the shared GR-303 DLC) BA currently thinks the process may work better if translations in the two CLEC switches and mapping in the DLC system were performed by the CLECs. Do you agree? If not, how should this work? Is each participating CLEC committed to allow another CLEC to perform disconnect translations in your switch?**

11. Does MCI propose obtaining access to BA DLC systems operating with GR303 interfaces from all potential DLC vendors BA may use – or just specific vendors?

CLECS ARE WILLING TO TEST GR303 INTERFACES WITH ALL DLC VENDORS CURRENTLY IN USE OR ACTIVELY BEING CONSIDERED FOR USE BY BA-NY IN THE MARKET AREAS WHERE THE CLEC IS LEASING UNBUNDLED LOOPS.

**BA understands your answer to mean that BA should evaluate the Multi-switch hosting/GR-303 arrangement looking at all BA's DLC (GR-303) vendors. Is this right?**

12. How/when does MCI propose notifying BA of new switch releases and software patches that are deployed in MCI switches that may effect interoperability of MCI's switch, MCI's and BA's OSS's, and BA's DLC systems?

**No answer provided to this question. Can you give it a shot?**

13. Does MCI propose to deploy/order access (in advance of individual end user service orders) to all existing DLC systems (operating with a GR303 interface) in a specific BA wire center? If not does MCI propose to deploy/order access (in advance of individual end user service orders) to selected DLC systems?

WHETHER THE CLEC ESTABLISHES AN INTERCONNECTION ARRANGEMENT WITH EVERY BA-NY DLC SYSTEM IS A QUESTION WHOSE ANSWER RELIES UPON A NUMBER OF FACTORS, INCLUDING BUT NOT LIMITED TO THE TYPES (AND PERCENTAGE) OF LOOP PLANT THAT BA-NY HAS DEPLOYED FROM ANY PARTICULAR CENTRAL OFFICE AND THE CLEC'S OWN NETWORK BUILD-OUT PLANS. AS SUCH, IT IS IMPOSSIBLE TO ANSWER THIS QUESTION WITH A NY SPECIFICITY AT THIS TIME.

**We understand this is a difficult question to answer, however, the direction has a big impact on development of processes and systems. BA believes selective CLEC access to some (not all) DLC systems (operating with a GR-303 interface) in a wire center adds a tremendous amount of complexity. Do you agree to proceed based on the CLEC accessing all DLC/GR-303 systems in a wire center? (The CLEC would still be able to decide to deploy this arrangement in a particular BA wire center or not; and if not, would still have access to individual analog UNE loops in that wire center as is done today.)**

14. Please describe how MCI proposes to order (process a service request) for an additional end user line in a shared GR303 DLC arrangement? What CFA (Connecting Facility Assignment) information would MCI expect to give to BA (relates to Question #4)?

DETAILED PROCESSES WILL NEED TO BE ADDRESSED BY BA-NY AND THE CLECS. SINCE IN A GR303 ENVIRONMENT AN ENDUSER'S LINE IS MAPPED TO A GR303



INTERFACE GROUP, OUR ASSUMPTION IS THAT THE CFA INFORMATION WILL CONSIST OF THE GR303 INTERFACE GROUP.

**In this question, we're trying to begin to address the first high level layer of details of this process (ordering), which in turn impacts/drives provisioning/assignment processes. Can you please provide any possible details? (BA knows the CLEC will expect the end user to be assigned to the CLEC's interface group.)**

**Digital Cross Connect System (DCS) / DS1 Handoff (DCS):**

1. a) Provide a detailed diagram of the desired configuration. This should include: the MCI switch (and MCI switch types), DSX facilities at the MCI switch location, the BA switch, the facilities between the MCI switch location and the BA switch location, the termination arrangements of facilities between the MCI switch location and BA switch location, Mux's and Fiber Optic Terminals, BA DLC COT, BA fiber distribution panel(s), BA DSX and BA DCS, BA DLC COT and RT.  
b) For each equipment/facility please indicate if this is owned by MCI, or BA.

**We really need you to answer this question (especially the diagram) for us to understand how you're envisioning this arrangement. Please include type(s) of switches that will be used and the software release (or higher) the switches would be on. It's important for us to know which physical components would be owned by BA, and which physical components would be owned by the CLECs.**

2. Does MCI want access to all UDLC and IDLC systems – or just IDLC?  
IDLCs ONLY. UDLC SYSTEMS ARE NOT THE ISSUE.

3. Does MCI want access to the following types of BA DLC: Litespan, SLC-96, SLC Series 5, Nortel Access Node, Nortel DMS-Urban, Other?  
CLECS REQUIRE ACCESS TO ALL DLC VENDORS CURRENTLY IN USE OR ACTIVELY BEING CONSIDERED FOR USE BY BA-NY IN THE MARKET AREAS WHERE CLECS ARE LEASING UNBUNDLED LOOPS.

**BA-NY has all the DLC systems listed in the question in use. We will proceed considering access is needed to all these. Please let us know if this is not what you want.**

4. Will MCI collocate at BA's wire centers to connect to and transport DS1's back to MCI's switch location? If not, what services from which service provider(s) does MCI propose to use to connect to and transport DS1's back to MCI's switch location?

**COLLOCATION AT BA-NY's WIRE CENTER IS NOT NECESSARY, ALTHOUGH CLECS MAY USE COLLOCATION AT ITS OPTION. IF COLLOCATION IS NOT USED, CLECS WILL LEASE DEDICATED TRANSPORT FROM BA-NY.**

**Bell Atlantic feels that at this juncture attempting to add the element of DCS/DS1 hand-off "combinations," including BA UNE transport, to a possible DCS/DS1 hand-off arrangement will add substantial complexity to this request. This is particularly true in the areas of: testing, alarms, ordering, and trouble isolation. Regulatory positions on collocation aside, in order to move forward with the evaluation/analysis, can we assume that a CLEC will collocate hardware in a BA CO to accept the DS1's, and transport these DS1's back to the CLEC switch?**

5. Relating to the components in #1, which facilities, equipment, and software items does MCI propose will be inventoried (for provisioning and assignment purposes) by MCI; and which will be inventoried by BA. If MCI proposes that BA inventories equipment/software items owned by MCI, what information will MCI provide to BA? Has MCI obtained Telcordia OSMINE approval for MCI's different switch types?

**CLECS WOULD INVENTORY ALL EQUIPMENT AND FACILITIES THAT ARE PROVIDED AS PART OF THE CLEC NETWORK. WE EXPECT THAT BA-NY WILL INVENTORY ALL EQUIPMENT AND FACILITIES THAT ARE PROVIDED BY BA-NY.**

**The term "CLEC network" could include physical items owned by the CLEC, as well as unbundled equipment provided by BA. Do you mean you will inventory all CLEC-owned equipment and BA will inventory all BA-owned equipment?**

6. All BA circuits terminated on DCSs are currently provisioned and assigned as "special services". As part of the DCS arrangement, does MCI propose that Bell Atlantic will re-design existing DLC systems (to terminate on DCSs) in a similar manner as "specials"?

**PLEASE EXPLAIN WHAT BA-NY MEANS BY "RE-DESIGNING" EXISTING DLC SYSTEMS.**

**Today BA-NY's DLC systems are not terminated on DS1/DS0 Digital Cross Connect machines. BA-NY has different processes and systems for provisioning and maintaining POTS services and Special Services. BA-NY's DS1/DS0 DCS's are inventoried by systems used for Special Services and Interoffice facilities (that the DLC systems would need to be built into).**

**We think the answer to this question has to be YES, but we weren't sure if there was something different that you were thinking of. Do you see this arrangement working differently?**

7. Please describe MCI's OSSs that would be used in the DCS arrangement for provisioning, surveillance, testing, and alarms. (E.g. name of the OSS, overall functionality of the OSS, how the OSS would be specifically used by MCI and/or BA in the DCS arrangement)? Would MCI propose accessing BA's DCS for any of these functions? If yes, please describe?

**Answers to this question have a significant impact on Systems and processes, particularly the issue of CLECs accessing BA's DCS for provisioning, surveillance, testing, and alarms. Can you please try to answer this?**

8. For the following troubles/fault locations: MCI switch hardware, MCI switch software, transport facilities between MCI switch location and BA switch location, BA DCS, BA loop from DLC RT to NID (trouble identified by end user), BA loop from DLC RT to NID (trouble identified by alarm) - - - please describe what MCI proposes for:

- Which company notices the trouble
- How does that company notice the trouble
- What testing will each company perform (in what sequence)
- What test systems and databases will each company access
- How will the trouble be resolved (closed out)

THE CLEC WOULD RECEIVE ALARMS AND TROUBLE INDICATIONS ASSOCIATED WITH DS1'S DEDICATED TO THAT CLEC. THE CLEC WILL BE RESPONSIBLE TO SECTIONALIZE THESE FAULTS. ANY FAULTS PROVING INTO BA-NY'S NETWORK (BEOND THE POT FRAME) WOULD BE REFERED TO BA-NY FOR RESOLUTION. IN ADDITION, THE CLEC WOULD BE RESPONSIBLE FOR RECEIVING AND SECTIONALLIZING ALL CUSTOMER REPORTS. BA-NY WOULD BE RESPONSIBLE TO RECEIVE AND PROACTIVELY RESPOND TO ALL ALARMS AND TROUBLE INDICATIONS ON FACILITY AND HARDWARE THAT ARE PART OF THEIR NETWORK.

**You can provide additional details later, but for now could you say what test systems and databases (inventory records) BA and the CLECs would access? Would CLECs test up to BA's DCS or through BA's DCS and beyond (what type of tests)? If beyond, how far? All the way to the end user?**

9. Describe the process steps proposed for an existing BA POTS end user to become an MCI POTS end user? Does MCI want to transfer existing end users using a conversion process, or does MCI propose the provisioning of new parallel facilities? Please describe the OSS's involved from each company, and timing/coordination requirements for the different work steps.

**Please try to answer this question. It's important. Existing analog UNE loop hot-cut processes don't fit. Today, with individual analog UNE loop hot-cuts BA checks for CLEC dial-tone and telephone number (prior to cutover) at BA's MDF. We can't figure out how to do anything analogous for this arrangement. This leaves us with an approach of throwing the end user and hoping for the best. Do you agree? Or do you see something different? If you agree, then this would probably be reflected in the type/extent of test capabilities you'd identify in the answers we're asking you for in questions #7 and #8. It seems to us that without appropriate OSS capabilities for both parties we'll be cutting end users over into digital oblivion (e.g., if either party errs, after making the cut, it will be really hard to figure out the digital channel mappings the end user was cut to.)**

10. Recabling existing BA DLC systems (that do not currently go through a DCS) in a central office to a DCS is an "out-of-service" condition. Does MCI disagree? Or does MCI know a better way to do this?

**BA Comment: Only approach we can think of is "out-of-service" recabling and cutover.**

11. Please describe the process/steps proposed for an MCI end user (served via the DCS arrangement) to become an end user of another CLEC (via the DCS arrangement). Include the different disconnect actions proposed to be performed by MCI employees, by BA employees, and by the new CLEC's employees?

THE LOOP WOULD BE DISCONNECTED FORM THE CLEC #1. THE LOOP WOULD THEN BE CONNECTED TO THE OTHER CLEC (CLEC #2) ACCORDING TO WHATEVER INTRERCONNECTION/LOOP ACCESS ARRANGEMENTS CLEC #2 HAS ESTABLISHED WITH BA-NY. OBVIOUSLY, CLEC #2 WOULD HAVE THE SAME OPPORTUNITYE AS CLEC #1 TO ESTABLISH SUITALBE IDLC INTERFACE ARRANGEMENTS. ADDITIONALLY, ATIS'S OBF (ORDERING AND BILLING FORUM) HAS ADDRESSED THE ISSUE OF END USERS CHANGING BETWEEN CLEC PROVIDERS.

**The OBF only deals with Ordering and Billing. The complicated pieces of the situation described in the question are provisioning and the actual cutover. The situation specifically described in the question is where both CLEC#1 and CLEC#2 would be using the DCS/DS1 hand-off arrangement.**

**(This question can probably be answered more easily after addressing question #9.)**

12. How/when does MCI propose notifying BA of new switch releases and software patches that are deployed in MCI switches that may affect interoperability of MCI's switch, MCI's and BA's OSS's, and BA's DCS systems?

**No answer provided to this question. Can you give it a shot?**

13. Does MCI propose to deploy/order access (in advance of individual end user service orders) to all existing DLC systems in a specific BA wire center? If not does MCI propose to deploy/order access (in advance of individual end user service orders) to selected DLC systems?

WHETHER THE CLEC ESTABLISHES AN INTERCONNECTION ARRANGEMENT WITH EVERY BA-NY DLC SYSTEM IS A QUESTION WHOSE ANSWER RELIES UPON A NUMBER OF FACTORS, INCLUDING BUT NOT LIMITED TO THE TYPES (AND PERCENTAGE) OF LOOP PLANT THAT BA-NY HAS DEPLOYED FROM ANY PARTICULAR CENTRAL OFFICE AND THE CLEC'S OWN NETWORK BUILD-OUT PLANS. AS SUCH, IT IS IMPOSSIBLE TO ANSWER THIS QUESTION WITH A NY SPECIFICITY AT THIS TIME.

**We understand this is a difficult question to answer, however, the direction has a big impact on development of processes and systems. BA believes selective CLEC access to some (not all) IDLC systems (using the DCS/DS1 hand-off arrangement) in a wire center from a practical operational perspective adds a tremendous amount of complexity. Do you agree to proceed based on the CLEC accessing all IDLC systems in a wire center? (The CLEC would still be able to decide to deploy this arrangement in a particular BA wire center, or not; and if not, would still have access to individual analog UNE loops in that wire center as is done today.)**

14. In those offices without existing 1/0 DCS's (or without existing capacity for expansion), does MCI propose that Bell Atlantic establish new 1/0 DCS's for the purpose of unbundling? Does MCI propose that BA should pre-position this equipment in all offices with existing DLC systems?

**IF ADDITIONAL GR303 INTERFACE GROUPS ARE NOT AVAILABLE AT SPECIFIC LOCATIONS, THE CLEC AND BA-NY WOULD NEED TO WORK TOGETHER COOPERATIVELY TO DETERMINE THE CAUSE OF SUCH UNAVAILABILITY AND EXPLORE POTENTIAL REMEDIES. WITHOUT MORE INFORMATION ABOUT THE SPECIFIC CAUSE OF THE LACK OF AVAILABILITY, IT IS SIMPLY IMPOSSIBLE TO SPECULATE ON POTENTIAL REMEDIATION. THE CLECS WOULD EXPECT BA-NY TO PROVIDE INFORMATION SUFFICIENT FOR CLECS TO UNDERSTAND THE ROOT CAUSE OF THE ISSUE.**

**Looks like the response to this question was cut and pasted by mistake from the responses to the Multi-switch Hosting/GR-303 interface questions. In this case the cause of the unavailability is that we don't have a DS1/DS0 DCS in the specific wire center (and don't plan to have one). The remedy is that we would need to buy and install a new one. Can you answer the question now?**

15. Please describe how MCI proposes to order (process a service request) for an additional end user line in a DCS/DLC arrangement? What CFA (Connecting Facility Assignment) information would MCI expect to give to BA (relates to Question #5)?

**THE INDUSTRY STANDARD NAMING CONVENTION MUST BE FOLLOWED FOR DS1s DEDICATED TO AND TERMINATING AT THE CLEC's POT FRAME. THIS NAMING CONVENTION WOULD BE THE BASIS OF THE CFA PROVIDED WITH A REQUEST FOR SERVICE.**

**DS1s shouldn't be the big problem. The individual (DS0) end users riding the DS1s need some thought/work. BA was assuming you were looking to cutover individual end users one at a time via service orders (LSRs). Is this correct? If yes, what specific CFA information would be provided assuming your DS1s terminate on a BA-NY DCS? Or are you looking to cutover end users to a DS1 in simultaneous blocks of 24 – with a big bang?**